

C. Remarks

1. Status of the Application

Claims 2-28 are pending in the application. Claims 2-9 and 13-28 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,979,317 (“Quinn”). Claims 10-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Quinn. Applicant respectfully traverses the foregoing bases for rejection and submits that the claims are allowable over Quinn, as discussed further below. Applicant hereby amends claims 2, 4, 9, 13-14, 17-18, 22-23, and 28 and adds new claims 29-38.

The examiner has objected to the specification because of an informality concerning reference characters. Applicant hereby amends the specification to correct the foregoing informality.

2. The Rejections of Claims 2-12 Have Been Overcome.

Claim 2, as filed, recited a solid state keyboard formed by the steps of:

- (a) depositing a layer of decorative material onto at least a portion of a substrate;
- (b) depositing a first layer of conductive material as a thin film onto at least a portion of the structure resulting from step (a), said first layer of conductive material being arranged in the form of a first sensing electrode having a shape amenable to substantial coverage by a predetermined object;
- (c) depositing a second layer of conductive material onto at least a portion of the structure resulting from step (b), at least a portion of said second layer of conductive material being electrically coupled to at least a portion of said first layer of conductive material, said second layer of conductive material being arranged in the form of a first electrical trace and a first bonding pad; and
- (d) electrically coupling a first electrical component to said first bonding pad.

The examiner rejected claim 2, as filed, as being anticipated by Quinn on the grounds that Quinn purportedly discloses:

a data entry panel formed by, a) depositing a layer of decorative material onto at least a portion of a substrate (see col 5, lines 59-61); b) depositing a first layer of conductive material onto a portion of the substrate (see col 5, lines 44-50 and fig 4, item 20; c) depositing a second layer of conductive material being electrically coupled to a portion of the first layer of conductive material (see col 6, lines 47-50, figs 5 and 6, items 23 and 27); d) second layer of conductive material being arranged in the form of a first electrical trace and a first bonding pad (see col 5, lines 32-50 and fig 6, items 27a-b and 26); e) electrically coupling a first electrical component to the first bonding pad (see col 5, lines 61-65 and col 6, lines 14-21).

Office Action at 2-3.

Applicant respectfully traverses the rejection of claim 2, as filed, for several reasons. First, all of the material layers, including the first and second conductive material layers, recited in claim 2, as filed, are deposited, either directly or indirectly, onto the *same* substrate. The structures that Applicant understands the examiner to refer to as first and second conductive layers in Quinn, however, are disposed on two *separate* substrates. Indeed, Quinn does not disclose two conductive layers disposed, either directly or indirectly, onto the same substrate.

Second, claim 2 recites the first layer of conductive material being arranged in the form of a first sensing electrode. To the extent Quinn discloses a layer of conductive material disposed on a substrate, such material is not arranged in the form of a sensing electrode. Indeed, the examiner has not identified any structure in Quinn responsive to this claim element.

Third, claim 2 recites the second layer of conductive material being arranged in the form of a first electrical trace and a first bonding pad. One skilled in the art would understand “bonding pad” here to refer to structure to which an electrical component could be connected or bonded. The structures of Quinn that the examiner has identified as bonding pads, however, are not such structures. Instead, they are the movable electrical contacts of a momentary-contact mechanical switch. If electrical circuit components were connected or bonded to these switch contacts, their intended functionality as switch contacts would be lost.

Fourth, claim 2 recites electrically coupling a first electrical component to the first bonding pad. The structure of Quinn that the examiner has identified as a first electrical component is, in fact, another electrical contact of a momentary-contact mechanical switch. If this contact were connected or bonded to a bonding pad, its intended functionality as a switch contact would be lost.

Fifth, claim 2 recites “a solid state keyboard.” One skilled in the art would understand the claimed solid state keyboard to be one whose keys did not require moving parts. Quinn does not disclose such a solid state keyboard. Instead, it discloses a keyboard using mechanical switches having movable contacts.

For at least the reasons set forth above, claim 2, as filed, distinguishes over and is not anticipated by Quinn. Notwithstanding, Applicant hereby amends the last clause of claim 2 to recite “connecting a first electrical component to said first bonding pad” instead of “electrically coupling a first electrical component to said first bonding pad” to further distinguish over the mechanical switch contacts of Quinn. Claim 2, so amended, more clearly and distinctly defines the invention and more clearly distinguishes over Quinn.

Claims 3-12 depend from claim 2 and, therefore, are distinguishable over and not anticipated by or unpatentable over Quinn for at least the reasons set forth above with respect to claim 2. Claim 3 is further distinguishable from Quinn on the ground that it recites the second layer of conductive material further being arranged in the form of a second sensing electrode having a shape amenable to substantial coverage by a predetermined object. The examiner contends that Quinn teaches this feature at col. 5, ll. 50-61. Office Action at 3. Careful review of Quinn, however, indicates that it does not teach conductive material arranged in the form of a sensing electrode having a shape amenable to substantial coverage by a predetermined object, either at the cited passage or elsewhere. Rather, the structure of Quinn that the examiner has

identified as a second sensing electrode is in fact nothing more than a conventional mechanical switch contact.

Claim 4 is further distinguishable over Quinn in that it recites the step of depositing a first layer of dielectric material onto at least a portion of the structure resulting from step (c) of claim 2. The examiner contends that Quinn teaches these features at col. 5, l. 60 to col. 6, l. 7. Office Action at 3. The cited passage of Quinn, however, does not disclose the foregoing step. Instead, it teaches placing a separate and independent spacer between conductive surfaces on first and second substrates. Indeed, nothing in Quinn teaches this step of claim 4.

Claims 6-7 are further distinguishable over Quinn on the ground that they recite the decorative material of claim 2 comprising an organic epoxy and an organic, ultraviolet curable material, respectively. The examiner contends that Quinn teaches these features at col. 3, ll. 39-45 and col. 6, ll. 22-31. Office Action at 3. Careful review of Quinn, however, indicates that Quinn neither teaches nor suggests these features, either at the cited passages or elsewhere.

Claim 8 is further distinguishable over Quinn on the ground that it recites the first layer of conductive material of claim 2 being substantially transparent. The examiner contends that Quinn teaches this feature at col. 3, ll. 39-45 and col. 6, ll. 22-31. Office Action at 3. Careful review of Quinn, however, indicates that Quinn neither teaches nor suggests this feature, either at the cited passages or elsewhere.

Claim 9 is further distinguishable from Quinn on the ground that it recites the step of connecting (a first electrical component to a first bonding pad) set forth in claim 2 comprising soldering. The examiner contends that Quinn teaches this feature at col. 6, ll. 47-50. The cited passage of Quinn, however, refers to the formation of mechanical switch contacts, not soldering of an electrical component to a bonding pad. Indeed, nothing in Quinn teaches this feature. Further,

to the extent the switch contacts of Quinn could be deemed to be bonding pads and electrical components, which Applicant contends they cannot, Quinn teaches away from the subject matter of claim 9; if the switch contacts of Quinn were soldered together, they would be permanently joined and would no longer function as switch contacts.

3. The Rejections of Claims 13-17 Have Been Overcome.

Claim 13, as filed, recited a solid state keyboard formed by:

- (a) depositing at least one layer of decorative material onto a substrate;
- (b) depositing a first conductive material as a thin film onto the structure resulting from step (a), said first conductive material being arranged in the form of a sensing electrode having a shape amenable to substantial coverage by a predetermined object, an electrical trace, and a bonding pad; and
- (c) electrically coupling an electrical component to said bonding pad.

The examiner contends that Quinn anticipates claim 13 for the same reasons as set forth in connection with claim 2 above. Office Action at 3. Applicant respectfully submits that claim 13, as filed, distinguishes and is allowable over Quinn because Quinn neither teaches nor suggests a solid state keyboard formed according to steps (b) or (c) of claim 13, as set forth above in connection with the discussion of claim 2. Notwithstanding, Applicant hereby amends the last clause of claim 13 to recite “connecting a first electrical component to said first bonding pad” instead of “electrically coupling a first electrical component to said first bonding pad” to further distinguish over the mechanical switch contacts of Quinn. Claim 13, so amended, more clearly and distinctly defines the invention and more clearly distinguishes over Quinn.

Claims 14-17 depend from claim 13 and, therefore, are distinguishable over and not anticipated by or unpatentable over Quinn for at least the reasons set forth above with respect to claim 13. Claims 14-17 further distinguish over Quinn for reasons similar to those set forth above in connection with claims 4-6 and 9, respectively.

4. The Rejections of Claims 18-22 Have Been Overcome.

Claim 18, as filed, recited a solid state keyboard comprising:

a substrate;

at least one layer of decorative material disposed on said substrate;

a first conductive material disposed as a thin film on at least a portion of said decorative material, said first conductive material arranged in the form of a sensing electrode having a shape amenable to substantial coverage by a predetermined object, an electrical trace and a bonding pad; and

an electrical component electrically coupled to said bonding pad.

The examiner contends that Quinn anticipates claim 18 for the same reasons as set forth in connection with claim 2 above. Office Action at 3. Applicant respectfully submits that claim 18, as filed, distinguishes and is allowable over Quinn because Quinn neither teaches nor suggests a solid state keyboard including the subject matter of the third and fourth clauses of claim 18 as set forth above in connection with the discussion of claim 2. Notwithstanding, Applicant hereby amends the last clause of claim 18 to recite “connecting a first electrical component to said first bonding pad” instead of “electrically coupling a first electrical component to said first bonding pad” to further distinguish over the mechanical switch contacts of Quinn. Claim 18, so amended, more clearly and distinctly defines the invention and more clearly distinguishes over Quinn.

Claims 19-22 depend from claim 18 and, therefore, are distinguishable over and not anticipated by or unpatentable over Quinn for at least the reasons set forth above with respect to claim 18. Claims 19-22 further distinguish over Quinn for reasons similar to those set forth above in connection with claims 5-6, 9, and 14, respectively.

5. The Rejections of Claims 23-28 Have Been Overcome.

Claim 23, as filed, recited a solid state keyboard comprising

a substrate;

at least one layer of decorative material disposed on said substrate;

a thin film of a first conductive material disposed on said decorative material, said thin film of a first conductive material being arranged in the form of a first sensing electrode having a shape amenable to substantial coverage by a predetermined object;

a layer of a second conductive material disposed on at least a portion of said thin film of a first conductive material, said layer of a second conductive material arranged in the form of a second sensing electrode having a shape amenable to substantial coverage by a predetermined object, an electrical trace, and a bonding pad; and

an electrical component ~~coupled~~ connected to said bonding pad.

The examiner contends that Quinn anticipates claim 23 for the same reasons as set forth in connection with claim 2 above. Office Action at 3. Applicant respectfully submits that claim 23, as filed, distinguishes and is allowable over Quinn because Quinn neither teaches nor suggests the subject matter of the third and fourth clauses of claim 18 as set forth above in connection with the discussion of claim 2. Notwithstanding, Applicant hereby amends the last clause of claim 18 to recite “connecting a first electrical component to said first bonding pad” instead of “electrically coupling a first electrical component to said first bonding pad” to further distinguish over the mechanical switch contacts of Quinn. Claim 18, so amended, more clearly and distinctly defines the invention and more clearly distinguishes over Quinn.

Claims 24-28 depend from claim 23 and, therefore, are distinguishable over and not anticipated by or unpatentable over Quinn for at least the reasons set forth above with respect to claim 23. Claims 24-28 further distinguish over Quinn for reasons similar to those set forth above in connection with claims 5-6 and 8-9, respectively.

6. Miscellaneous Claim Amendments

In addition to the claim amendments discussed in detail above, Applicant hereby amends claims 4, 13-14, 18, 22-23, and 28 for consistency with the foregoing claim amendments and/or to

more clearly and distinctly define the invention. Applicant respectfully submits that none of the present amendments adds new matter to the application.

7. New Claims 29-38 Are Allowable.

Applicant hereby adds new claims 29-38 to more completely claim the invention. Applicant respectfully submits that these claims are allowable for reasons similar to those discussed above in connection with claim 2-28.

8. The Objection to the Specification Has Been Overcome.

The examiner has objected to the specification based on an informality concerning reference characters. Applicant respectfully submits that the present amendment to the specification overcomes this objection.

9. Conclusion

Applicant respectfully submits that the application is in condition for allowance. Accordingly; Applicant respectfully requests reconsideration of the application and allowance of the claims.

Respectfully submitted,



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